

determining an address of the game service server corresponding to the one communication port; and

routing the message from the gaming machine to the address of the game service server.

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38. (Amended) The method of claim 31, wherein the native communication protocol is selected from the group consisting of RS-422/485, Fiber Optic, RS-232, DCS Current Loop, Link Progressive Current Loop, IEEE (Institute of Electronic and Electrical Engineers) 1394-compatible, Ethernet and USB (Universal Serial BUS)-compatible.

REMARKS

Claims 1-40 are currently pending in the application. Claims 1, 7, 8, 10, 11, 16, 17, 29, 30, 31, 34, 36, 37 and 38 have been amended.

The applicant believes the claim amendments do not add any new matter. The transparency of the master gaming controller relative to the communications multiplexer device of the present invention is described on page 14, first full paragraph.

Specification

The examiner objected to the lack of capitalization for trademarks. The specification has been amended in a number of locations to capitalize "FireWire" and the objection is believed overcome thereby.

The specification has been amended to correspond to a proposed drawing correction.

The abstract has been amended for the purposes of clarification.

Drawings

The examiner objected to the drawings not showing a 16 communication port model of the claimed invention. A proposed drawing correction of FIG. 3 has been submitted with the reply and the objection is believed overcome thereby.

Rejections under 35 U.S.C. § 112

The examiner rejected claims 16, 27 and 38 under 35 U.S.C. § 112, 2nd paragraph for being indefinite for containing the trademark name FIREWIRE. The claims have been amended and the objection is believed overcome thereby.

Rejections under 35 U.S.C. § 103

The Examiner rejected claims 1-40 U.S.C. 103 (a) as being unpatentable over Sides (US Patent No. 5,048,831), O'Toole et al. (US patent No. 6,345,485), Goody (US Patent No. 6,097,721), Cunningham et al. (US Patent no. 6, 366, 217) and Alcorn et al (US Patent no. 6, 149, 522) viewed collectively. The rejection is respectfully traversed.

All of the instant claims as amended, 1-40 describe a communication multiplexer device with a plurality of communication ports, an output communication port and processor logic. The communication multiplexer device is connected to a master gaming controller on a gaming machine and one or more game service servers and receives communications from both the one or more game servers and the master gaming controller via the plurality of communication ports and the output communication port. The communication multiplexer device controls communications between the plurality of communication ports and the output communication port. Further, the communication multiplexer device is transparent to the master gaming controller. The structure and function described in the limitations of claims 1-40 are not described in the combination of references or individual references cited by the examiner.

The examiner has relied on the Sides reference to provide the basis of a gaming device. In FIGs. 1 and 2 of Sides, a gaming device with a processor 16 and communications module 20 is described. The structure of communications multiplexer of present invention, such as a plurality of communications ports and an output communication port is not described in Sides. Sides shows single connections to the communications module (one in and one out). Further, as noted by the examiner, Sides does not describe controlling communications, such as multiplexing of communications between the plurality of ports and the output communication ports. The computer processor 16 in Sides controls the output signals to other units in the module (Col. 4, 37-43) which implies the communication module is not transparent the processor since output signals are controlled by the processor. Sides does not teach about a master gaming controller that communicates with one or more game service servers in a native communication protocol. Further, a communication multiplexer device that is connected to but is transparent to a master gaming controller with the structure and function described in the limitations of the instant claims 1-40 is not found in Sides, the additional references and the combination of the references.

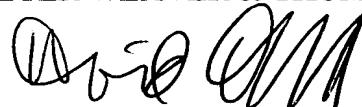
Further, for the combination cited examiner, the applicant doesn't see a motivation or suggestion in the references themselves or skill in the art to modify Sides to provide the structure and function of the present invention and without using the hindsight of the applicant's disclosure. The applicant has suggested that one advantage of the present invention is that certain communication functions may be added to a gaming machine without modifying software on the gaming machine. This aspect of invention is important because of the regulated aspect of gaming machines used to provide games of chance. Although the examiner has cited references such as

Goody and Cunningham to suggest multiplexing and network functions and to suggest the obviousness of these functions in the present invention, obviousness also requires that there be a teaching suggesting a motivation in the references or the general skill in the art for the combination.

The examiner has stated the motivation that by using a multiplexer as the means for data collection and incorporating a board of ports in the multiplexer, it is possible to create a system where a variety of applications can use the same medium for serving messages. However, Sides and the other references cited by the examiner in the combination don't provide any teaching or motivation for modifying Sides in this manner i.e., Sides doesn't provide any suggestion for a need or benefit to providing a system where a variety of applications can use the same medium for serving messages. What applications in Sides would use this system? Also, Sides shows only single connections to the communication module, which not only does doesn't suggest but teaches away from a communication multiplexer device. Therefore, for at least these reasons, Sides, O'Toole et al., Goody, Cunningham et al. and Alcorn et al and their combinations can't be said to render obvious the invention as recited in claims 1-40 and the rejection is believed overcome thereby.

Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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APPENDIX A

At page 6, last paragraph, extending to page 7, please substitute the following paragraph:

In one embodiment, the one or more communication ports may comprise a first communication port using a first native communication protocol a second communication port using a second native communication protocol where the native communication protocol is selected from the group consisting of a progressive game service protocol, a bonus game service protocol, a player tracking service protocol, a cashless ticketing service protocol, a game downloading service protocol, a prize service protocol, an entertainment content service protocol, a concierge service protocol, a lottery service protocol and a money transfer service protocol. A physical interface for the one or more communication ports may be selected from the group consisting of RS-422/485, Fiber Optic, RS-232, DCS Current Loop, Link Progressive Current Loop, [FireWire] FIREWIRE, Ethernet and USB. Also, the one or more communication ports may comprise a first communication port that receives and sends messages from a first game service server and a second communication port that receives and send messages from a second game service server where the communication between the gaming machine and the one or more game servers may be encrypted. The one or more game service servers may be selected from the group consisting of a prize server, a game server, an entertainment content server, a cashless ticketing server, progressive game server, a bonus game server, a concierge service server, a lottery server and a money transfer server.

At page 8, first full paragraph, please substitute the following paragraph,

In specific embodiments, the second communication protocol may be a TCP/IP communication protocol and the native communication protocol may be selected from the group consisting of a progressive game service protocol, a bonus game service protocol, a player tracking service protocol, a cashless ticketing service protocol, a game downloading service protocol, a prize service protocol, an entertainment content service protocol, a concierge service protocol, a lottery service protocol and a money transfer service protocol. A physical interface for the one or more communication ports may be selected from the group consisting of RS-422/485, Fiber Optic, RS-232, DCS Current Loop, Link Progressive Current Loop, [FireWire] FIREWIRE, Ethernet and USB. The one or more communication ports may comprise 8 to 16 communication ports.

At page 12, second full paragraph:

RS-422/485, Fiber Optic, RS-232, DCS Current Loop, Link Progressive Current Loop, [FireWire]FIREWIRE, Ethernet and USB are examples of physical interfaces with associated physical communication protocols which may be utilized on one of the game service interfaces 302. RS-422/485 and RS-232 are serial communication protocols established by the Institute of Electronic and Electrical Engineers (IEEE). DCS Current Loop and Link Progressive Current Loop are proprietary communication standards developed by International Gaming Technology, Reno, NV. Universal Serial Bus (USB) (Communication protocol standards by the USB-IF, Portland, Oregon, <http://www.usb.org>) is a standard serial communication methodology used in the personal computer industry. [FireWire]FIREWIRE is a cross-platform implementation of the high-speed serial data bus (defined by IEEE Standard 1394-1995) that can move large amounts of data between computers and peripheral devices.

At Page 14, last paragraph, please substitute the following paragraph.

In one embodiment, the communication multiplexer device 304 receives messages from the gaming machine 2 (sent to an appropriate game service server) at four communication ports on the communication multiplexer device (see FIG. 5A) where each communication port is connected one of the game service network interfaces 302. The four communication ports are configured to be compatible with the physical interface and physical communication protocol of each game service network interface connected to the port such that the message may be received in a native communication protocol used by the gaming machine. For this invention, the number of game service servers, game service network interfaces and communication ports may vary (e.g. 16 game service servers, 16 game service network interfaces and 16 communication ports 303) and is not limited to four of each.

In the abstract, please substitute the following paragraph,

A [disclosed] gaming machine [provides]with a communication multiplexer device that allows communications between the gaming machine and one or more game service servers all within a single network interface is described. The single network interface may be a wireless or wired network interface. The communication multiplexer device converts messages in native communication protocols used by the gaming machine to a network communication protocol such as TCP/IP for transmission over the single wired or wireless network interface. The communication multiplexer is designed such that the gaming machine may receive messages that

have been transmitted using the native communication protocols without modifying regulated gaming software on the gaming machine.



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APPENDIX B

1. (Amended) A gaming machine comprising:
 - a master gaming controller [that controls]designed or configured to control a game played on the gaming machine wherein each game played on the gaming machine includes receiving a wager for the game, determining the game outcome and the presenting the game outcome and [communicates]to communicate with one or more game service servers wherein each game service server provides at least one game service;
 - a communication multiplexer device connected to the master gaming controller wherein the communication multiplexer device is transparent to the master gaming controller in its communications with the one or more game service servers, the communication multiplexer device comprising
 - (i) [one or more] a plurality of communication ports wherein each communication port is capable of transmitting and receiving [transmits and receives] messages with the master gaming controller using a native communication protocol,
 - (ii) an output communication port [that transmits and receives]for transmitting and for receiving messages with the one or more game service servers using a second communication protocol, and
 - (iii) processor logic that multiplexes and demultiplexes messages between the [one or more]plurality of communication ports and the output communication port and that converts between the native communication protocol and the second communication protocol; and
 - a network interface connected to the output communication port that receives and transmits messages using the second communication protocol.
2. The gaming machine of claim 1, wherein the game service is selected from group consisting of progressive game services, bonus game services, player tracking services, cashless ticketing services, game downloading services, prize services, entertainment content services, concierge services, lottery services and money transfer services.
3. The gaming machine of claim 1, wherein the network interface is a wireless radio connection.
4. The gaming machine of claim 1, wherein the network interface is a wired Ethernet connection.
5. The gaming machine of claim 3, further comprising:

an antenna for transmitting and receiving communications over the wireless radio connection.

6. The gaming machine of claim 1, wherein the native communication protocol is selected from the group consisting of a progressive game service protocol, a bonus game service protocol, a player tracking service protocol, a cashless ticketing service protocol, a game downloading service protocol, a prize service protocol, an entertainment content service protocol, a concierge service protocol, a lottery service protocol and a money transfer service protocol.

7. (Amended) The gaming machine of claim 1, wherein the [one or more]the plurality of communication ports comprises a first communication port using a first native communication protocol a second communication port using a second native communication protocol.

8. (Amended) The gaming machine of claim 1, wherein the [one or more]the plurality of communication ports comprises a first communication port that receives and sends messages from a first game service server and a second communication port that receives and send messages from a second game service server.

9. The gaming machine of claim 1, wherein communication between the gaming machine and the one or more game servers is encrypted.

10. (Amended) The gaming machine of claim 1, wherein the processor logic is capable of [configures]configuring each of the [one or more]plurality of communication ports to emulate a native communication protocol.

11. (Amended) The gaming machine of claim 10, wherein the communication multiplexer communication device is capable of [communicates]communicating with a boot server to determine the native communication protocol to be used on each of the [one or more]plurality of communication ports.

12. The gaming machine of claim 1, wherein the one or more game service servers are selected from the group consisting of a prize server, a game server, an entertainment content server, a cashless ticketing server, progressive game server, a bonus game server, a concierge service server, a lottery server and a money transfer server.

13. The gaming machine of claim 1, wherein the game played on the gaming machine is at least one of a video slot game, a mechanical slot game, a lottery game, a video poker game, a video black jack game, and a video pachinko game.

14. The gaming machine of claim 1, wherein the second communication protocol is a TCP/IP communication protocol.

15. The gaming machine of claim 1, wherein the gaming machine employs regulated gaming software that provides messages in the native communication protocol and wherein the regulated gaming software is not modified to accept messages transmitted in the second communication protocol.

16. (Amended) The gaming machine of claim 1, wherein a physical interface of the one or more communication ports is selected from the group consisting of RS-422/485, Fiber Optic, RS-232, DCS Current Loop, Link Progressive Current Loop, [FireWire] IEEE (Institute of Electronic and Electrical Engineers) 1394-compatible, Ethernet and USB (Universal Serial BUS)-compatible.

17. (Amended) A multiplexer communication device for multiplexing communications between a master gaming controller on a gaming machine and one or more game service servers, the multiplexer communication device comprising:

[one or more]a plurality of communication ports wherein each communication port transmits and receives messages between the gaming machine and the multiplexer communication device in a native communication protocol;

a multi-port communication board allowing each communication port to be configured to accept multiple native communication protocols;

an output communication port that transmits messages addressed to one or more game servers and receives messages from one or more game service servers addressed to one of the plurality of [more] communication ports using a second communication protocol; and

processor logic that is capable of multiplexing and demultiplexing [multiplexes and demultiplexes] messages between the [one or more]the plurality of communication ports and the output communication port and that converts between the native communication protocol and the second communication protocol wherein the communication multiplexer device is transparent to the master gaming controller in its communications with the one or more game service servers.

18. The communication multiplexer device of claim 17, wherein the gaming machine employs regulated gaming software that provides messages in the native communication

protocol to the one or more communication ports and wherein the regulated gaming software is not modified to accept messages transmitted in the second communication protocol.

19. The communication multiplexer device of claim 17, further comprising: an EEPROM that provides configuration information to the processor board.

20. The communication multiplexer device of claim 17, further comprising: a firewall connected to the output communication port.

21. The communication multiplexer device of claim 17, further comprising: a power supply.

22. The communication multiplexer device of claim 17, further comprising: a network interface board.

23. The communication mutliplexer device of claim 22, wherein the network interface board provides a wireless radio network interface.

24. The of claim 22, wherein the network interface board provides a Ethernet network interface.

25. The communication mutliplexer device of claim 17, wherein the second communication protocol is a TCP/IP communication protocol.

26. The communication mutliplexer device of claim 17, wherein the native communication protocol is selected from the group consisting of a progressive game service protocol, a bonus game service protocol, a player tracking service protocol, a cashless ticketing service protocol, a game downloading service protocol, a prize service protocol, an entertainment content service protocol, a concierge service protocol, a lottery service protocol and a money transfer service protocol.

27. (Amended) The communication multiplexer device of claim 17, wherein a physical interface of the one or more communication ports is selected from the group consisting of RS-422/485, Fiber Optic, RS-232, DCS Current Loop, Link Progressive Current Loop, [FireWire] IEEE (Institute of Electronic and Electrical Engineers) 1394-compatible, Ethernet and USB (Universal Serial BUS)-compatible.

28. The communication mutliplexer device of claim 17, further comprising:

an antenna connected to the output communication port.

29. (Amended) The communication mutliplexer device of claim 17, wherein the [one or more]plurality of communication ports comprise 8 communication ports.

30. (Amended) The communication mutliplexer device of claim 17, wherein the [one or more]plurality of communication ports comprise 16 communication ports.

31. (Amended) A method of providing communications between master gaming controller on a gaming machine and one or more game service servers in a communication multiplexer device connected to the gaming machine and the one or more game service servers, the method comprising:

establishing communications with a boot server located outside of the [communications]communication multiplexer device;

initializing one or more of a plurality of communication ports on the communications multiplexer device wherein each of the initialized communication ports is connected to a game service network interface on the gaming machine;

mapping each of the initialized communication [port]ports to a port game service server;

configuring each of the one or communication [port]ports to accept a native communication protocol used by [the port game service server and] the master gaming controller on the gaming machine for communications over the game service network interface with the port game service server wherein the communication multiplexer device is transparent to the master gaming controller;;

establishing a communication connection between each communication port and the port game service server [using a second communication protocol]; [and

for each communication port,

transmitting a message from the port game service server to the gaming machine through the communication port.]

receiving a message from the master gaming controller via a first initialized communication port in the native communication protocol used on the first initialized communication port and

transmitting the message using a second communication protocol different from the native communication protocol to the port game service server mapped to the first initialized communication port.

32. The method of claim 31, wherein the gaming machine employs regulated gaming software that provides messages in the native communication protocol to the one or more

communication ports and wherein the regulated gaming software is not modified to accept messages transmitted in the second communication protocol.

33. The method of claim 31, wherein the communication multiplexer device is assigned an IP address by the boot server.

34. (Amended) The method of claim 31, further comprising:
converting messages from the gaming machine in the native communication protocol received at one of the initialized communication ports to the second communication protocol;
and
transmitting the messages in the second communication protocol to the port game service server.

35. (Amended) The method of claim 31, further comprising:
converting messages from the port game server addressed to one of the initialized communication ports in the second communication protocol to the native communication protocol of the communication port; and
transmitting the messages in the native communication protocol [to]via the initialized communication port to the master gaming controller on the gaming machine.

36. The method of claim 31, further comprising:
receiving a message from the port game service server wherein the message contains a communication port address; and
routing the message from the game service server to the communication port indicated by the communication port address.

37. (Amended) The method of claim 31, further comprising:
receiving a message from the gaming machine at one of the initialized communication ports;
determining an address of the game service server corresponding to the one communication port; and
routing the message from the gaming machine to the address of the game service server.

38. (Amended) The method of claim 31, wherein the native communication protocol is selected from the group consisting of RS-422/485, Fiber Optic, RS-232, DCS Current Loop, Link Progressive Current Loop, [FireWire] IEEE (Institute of Electronic and Electrical Engineers) 1394-compatible, Ethernet and USB (Universal Serial BUS)-compatible.

39. The method of claim 31, wherein the second communication protocol is a TCP/IP communication protocol.

40. The method of claim 31, wherein the one or more game service servers are selected from the group consisting of a prize server, a game server, an entertainment content server, a cashless ticketing server, progressive game server, a bonus game server, a concierge service server, a lottery server and a money transfer server.

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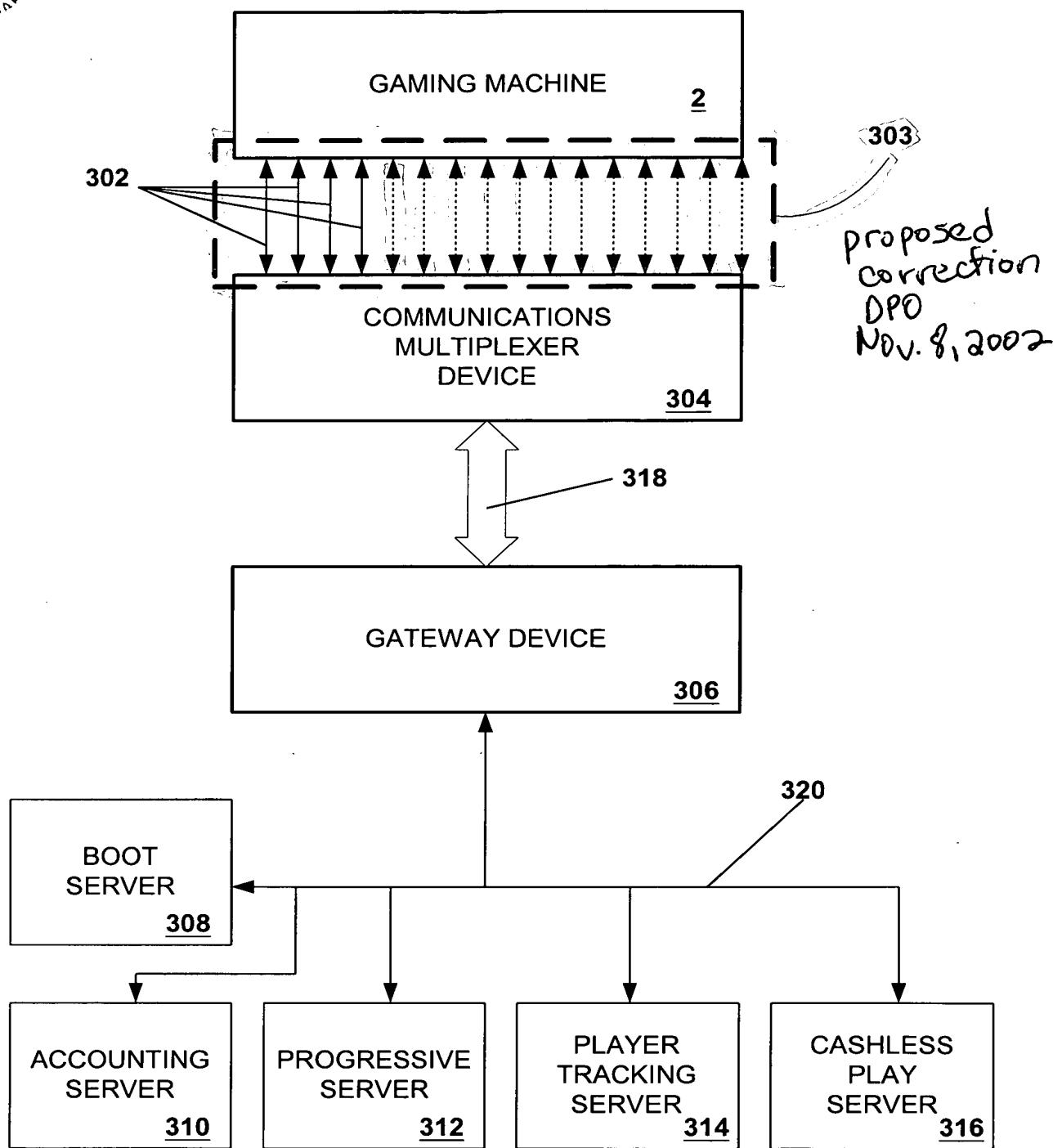


FIGURE 3